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ABSTRACT

The purpose of this study was to observe and describe the teaching behavior and interaction patterns of four elementary school physical education teachers longitudinally. Each teacher was observed twice a day (AM and PM) for a period of 20 consecutive days, resulting in 40 observations per subject. The following conclusions were reached: (1) teaching behavior and interaction patterns vary minimally over 20 days; (2) traditional, nonhumanistic teaching styles prevailed in the movement classes observed; (3) variable of time of day, grade level, and day of the week have a negligible influence on teaching behavior and interaction in physical education classes; (4) significant differences exist in teaching behavior between male and female teachers; and (5) content of the lesson was found to be an influential factor on interaction and teaching behavior in the gymnasium. (JD)

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"The Observation and Description of Teaching Behavior and Interaction of Selected Physical Education Teachers." Paper presented at National AAHPER Convention, New Orleans, March 18th, 1979.

John T.F. Cheffers and Bennett J. Lombardo

A persistent criticism of observation research relates to the single visitation technique as opposed to successive, daily, repeated observations extending across curriculum change. The purpose of this study was to observe and describe the teaching behavior and interaction patterns of four elementary school physical education teachers longitudinally. Each subject was an experienced and qualified teacher of physical education.

A modified case study design was employed. Specifically, each teacher was observed twice a day (AM and PM) for a period of twenty consecutive teaching days, resulting in forty observations per subject.

The instrument used was The Cheffers Adaptation of Flanders Interaction Analysis System (hereafter referred to as CAFIAS), which describes the interaction patterns and teaching behavior during instructional sessions. Using the program developed by Rodgers (Cheffers et al, 1974) to facilitate the data analysis and compute the required ratios and interaction matrices, the data were presented in three major categories:

1. Use of CAFIAS categories.
2. Thirty-one major CAFIAS parameters.
3. Patterns of interaction between teacher and students as well as among students.

Mean percentages of CAFIAS category usage for each teacher are presented in Figure 1, while Figure 2 illustrates the variability of three selected CAFIAS parameters, and Figure 3 summarizes the interaction patterns most often observed in this study.

Kruskal - Wallis one-way ANOVA revealed the following findings:

1) Teaching behavior and interaction patterns remained stable. Only two of the fifty-one measures employed in this study demonstrated significant variability across all teachers, that is,

1) Pupil initiation, verbal, teacher suggested (0.001)
2) Student verbal, predictable response (0.001)

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2) In this study the teaching patterns could be summarized universally as teacher information-giving, teacher direction, and predictable student nonverbal response. Teacher response to student behaviors in the various forms of feedback was singularly absent. The following illustrates a typical student-teacher interaction observed in this study:

> Teacher: "Boys and girls, when I give the signal I want each of you to get a basketball and shoot foul shots only for five minutes. Go!
>
> Students: Each student follows the teacher's instructions as directed, i.e., each student selects a basketball and shoots only foul shots for five minutes.

3) The teachers in this study rarely required students to utilize higher levels of cognitive functioning other than to produce robot-like responses. Genuine student interpretation was rarely observed. An example of typical student cognitive activity is provided in the following episode:

> Teacher: "How many strikes is a batter permitted in softball before he is put out?"
>
> Student: "Three."
>
> Teacher: "Yes. How many balls must a batter receive before he can 'walk' to first base?"
>
> Student: "Four."

4) Nineteen of the fifty-one measures employed in this study demonstrated significant variability across grades K-6, with kindergarten classes being the most unique. However, only three kindergarten classes were included for observation in this study.

5) Only one significant difference was revealed between physical education classes conducted in the morning and physical education classes conducted in the afternoon. Specifically,

> Teacher nonverbal criticism was signficantly higher in <u>afternoon</u> elementary school movement classes (0.05)

6) Male and female teachers were significantly different on 15 of 31 major CAFIAS parameters and 14 of 20 CAFIAS categories (i.e., 60% of all parameters employed in this study).

1) Males contributed more verbally, nonverbally, & totally.
2) Students contributed more verbally, & totally in female classes.
3) More silence in male teacher classes.
4) More confusion in classes led by females.
5) Female teachers employed more nonverbal, & total use of questioning.
6) Pupil Initiation, teacher suggested, verbal,nonverbal,&total significantly higher in classes with female teacher.
7) Pupil initiation, verbal & total,significantly greater in classes conducted by male teachers (student suggested) (Basically off-task)
8) Females employed more teacher acceptance, verbal & nonverbal.
9) Females made greater use of verbal questions (0.05)
10) Males used more directions (0.001).
11) Males used more nonverbal criticism (0.001).
12) Male teachers gave more nonverbal information (i.e., demonstration) (0.025).
13) Females significantly more verbal student predictable responses (0.025
14) Males-- significantly greater student nonverbal predictable responses (0.001)
15) Females --more interpretive behavior (student)--verbal & nonverbal (0.
16) Significantly greater student initiated behavior in female-led classes, verbal (0.01) and nonverbal (0.001).

7) As observed in this study, two measures of teaching behavior and interaction demonstrated significant variability across the days of the week. Specifically,

1) Pupil initiation, verbal, student suggested (0.05), with Thursday and Friday being the unique days.

2) Teacher verbal acceptance was significantly higher in movement classes held on Monday (0.01).

8) The incidence of teacher empathetic behavior was almost non-existent. Of 112,000plus individual behaviors recorded, only twenty instances of teacher acceptance of student emotions were noted (0.02% rate of occurrence). Furthermore, these twenty empathetic behaviors were observed in the movement classes of only two of the four teachers. In an era characterized by a revival of humanism in education, this latter finding reaffirms the direct, traditional, and often autocratic approach too commonly employed by physical educators.

9) 24 of 31 Major CAFIAS parameters and 16 of 20 CAFIAS categories manifested significant variability dependent upon specific content of the lesson (40 of 51 or approximately 80% of all measures employed in this study). Each observed lesson was categorized by placing it in one of four groups: team sports; individual/dual/self-testing; movement education/exploration; or miscellaneous.

Classes in which subject matter centered on TEAM SPORT ACTIVITIES varied significantly from the other activities:

1) Teacher contribution, verbal & total. (greatest)
2) Teacher praise, verbal and nonverbal. (lowest)

SELF-TESTING/INDIVIDUAL/DUAL ACTIVITIES varied from the other activities in:

1) Student verbal contribution -- lowest.
2) Silence, confusion, silence &/or confusion (lowest).
3) Use of questioning, verbal, nonverbal, total (lowest).
4) Pupil initiation, teacher suggested, (Nonverbal & total)--lowest.
5) Pupil initiation, student suggested (verbal,nonverbal & total) highest.
6) Class as one unit (lowest).
7) Class in groups or as individuals (highest).
8) Teacher praise, verbal & nonverbal (highest).
9) Teacher acceptance, verbal & nonverbal (lowest).
10) Teacher question, verbal & nonverbal (lowest).
11) Teacher direction, verbal,(highest).
12) Student predictable response, verbal (lowest),nonverbal (highest).
13) Student interpretive response, verbal and nonverbal (lowest).
14) Confusion & silence,lowest.

MOVEMENT EDUCATION/EXPLORATION:

1) Teacher acceptance, verbal & nonverbal, (highest).
2) Teacher use of questioning, verbal (highest).
3) Teacher verbal direction & nonverbal (lowest).
4) Student predictable response, nonverbal (lowest).
5) Student interpretive response, verbal & nonverbal (highest).
6) Student initiated behavior, verbal & nonverbal (highest)
7) Teacher acceptance & praise, verbal, nonverbal, total (highest).
8) Pupil initiation, verbal, nonverbal, & total, (highest).
9) Teacher as teacher (lowest).

MISCELLANEOUS ACTIVITIES:

1) Teacher acceptance & praise, nonverbal (lowest).
2) Pupil initiation verbal, nonverbal, total (lowest).
3) Student initiated behavior, verbal (lowest).

Based on the results of this study, it can be concluded that:

1) Teaching behavior and interaction patterns vary minimally over twenty teaching days. Modifications in the current practice of random observation, for the purpose of supervision are not justified at this time.

2) The teaching behavior and interaction patterns recorded indicate that traditional, non-humanistic teaching styles prevailed in the movement classes observed in this study.

3) The variables of time of day, grade level, and day of the week of the movement class, have a negligible influence on the teaching behavior and interaction in physical education classes.

4) The results of this study indicate that there were significant differences in teaching behavior between male and female teachers.

5) The content of the lesson was found to be an influential factor on interaction and teaching behavior in the gymnasium. Teachers seemed to vary their behavior from unit to unit.

Figure 1

Mean Percent of Behaviors in each CAFIAS Category

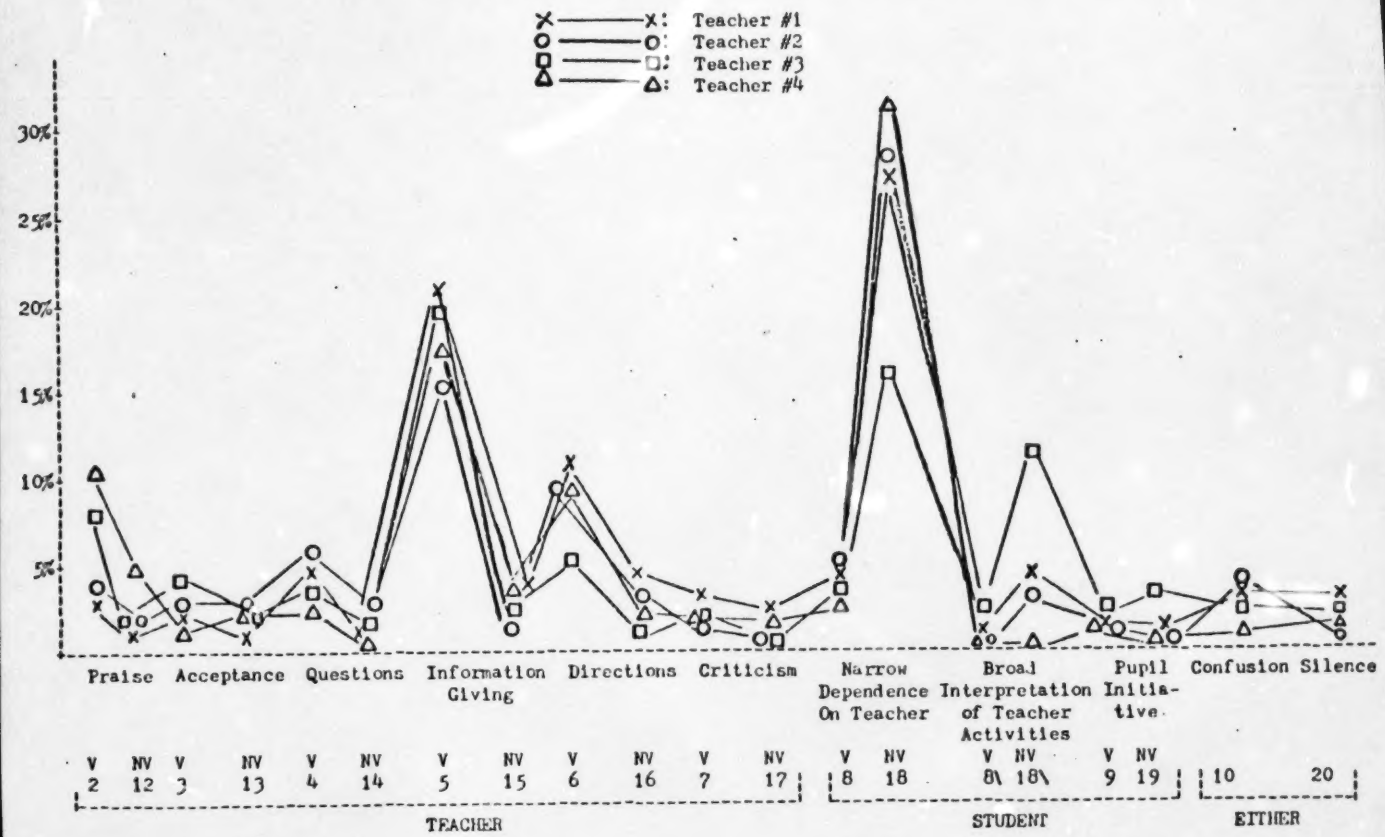


Figure 2

Selected CAFIAS Parameters

KEY

Teacher #1 = O—O

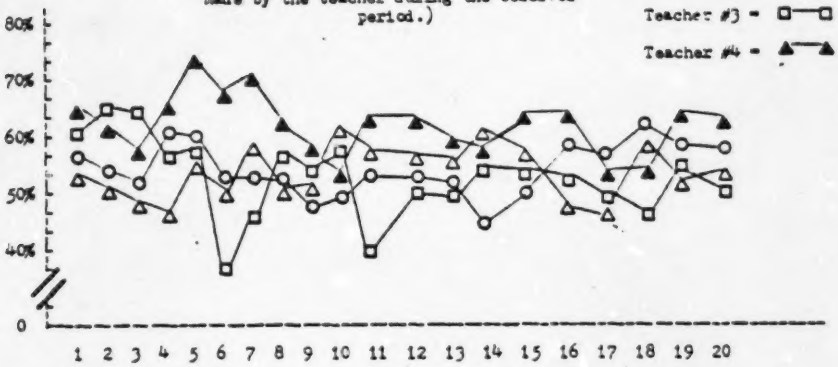
Teacher #2 = Δ—Δ

Teacher #3 = □—□

Teacher #4 = ▲—▲

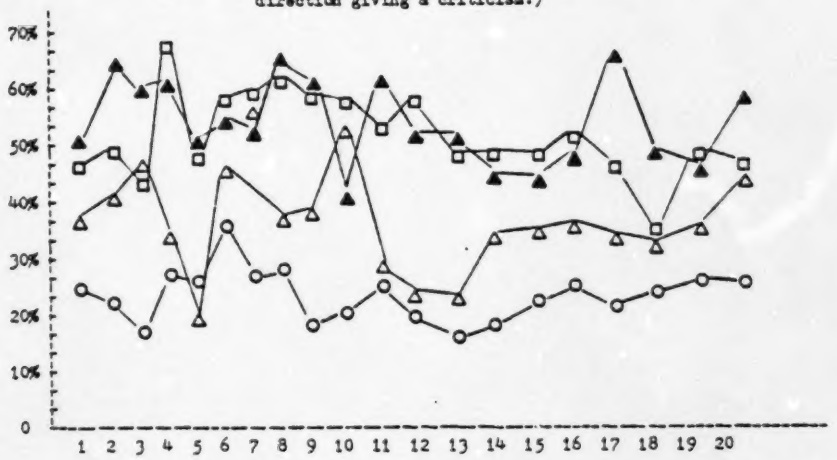
Total Teacher Contribution

(The percentage of verbal & nonverbal behaviors made by the teacher during the observed period.)



Total Teacher Acceptance & Praise

(The ratio of teacher acceptance & praise to teacher direction giving & criticism.)



Total Pupil Initiation - Teacher Suggested

(The ratio of students' initiated behaviors as a result of teacher suggestion to unsolicited behaviors.)

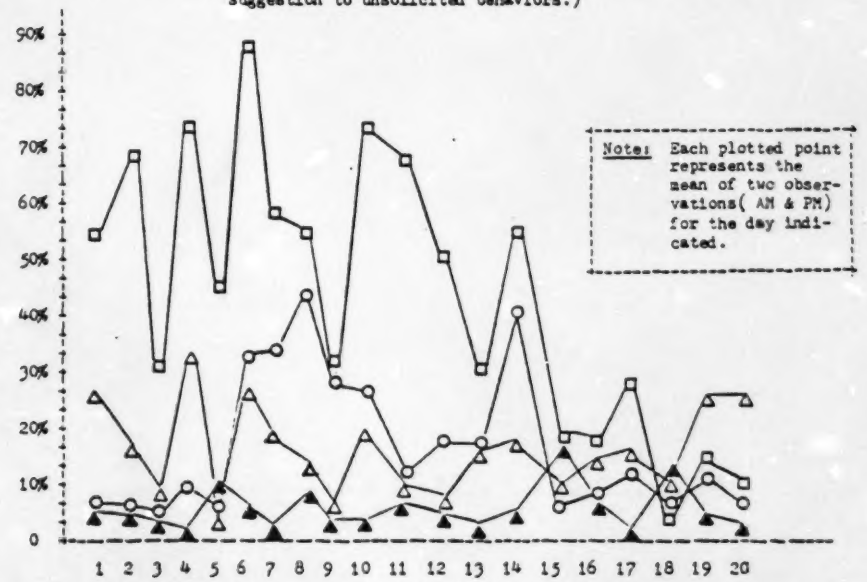


Figure 3

Most Frequent Interaction Patterns in Elementary School Physical Education Classes